Ship Maintenance Organization

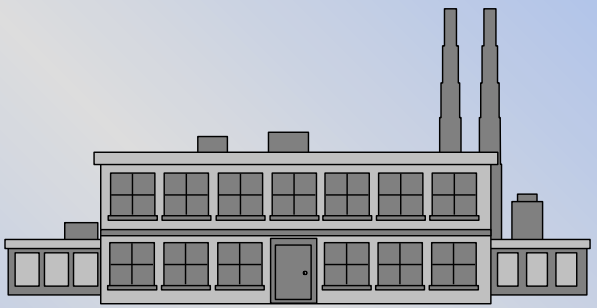
FROM KNOWLEDGE

"Prompt and Sustained Combat Operations at Sea on a Continuing Basis"

Chief of Naval Operation

EFFECTIVENESS

Aboard Ship



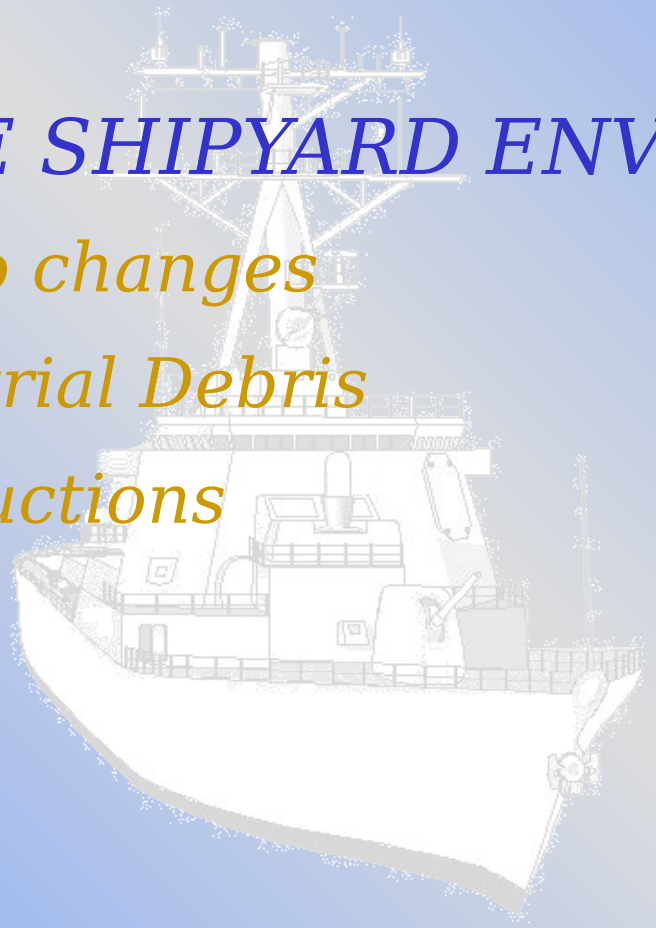
Ashore

Part 4 of 4

Availability Execution

ANTICIPATE SHIPYARD ENVIRONMENT

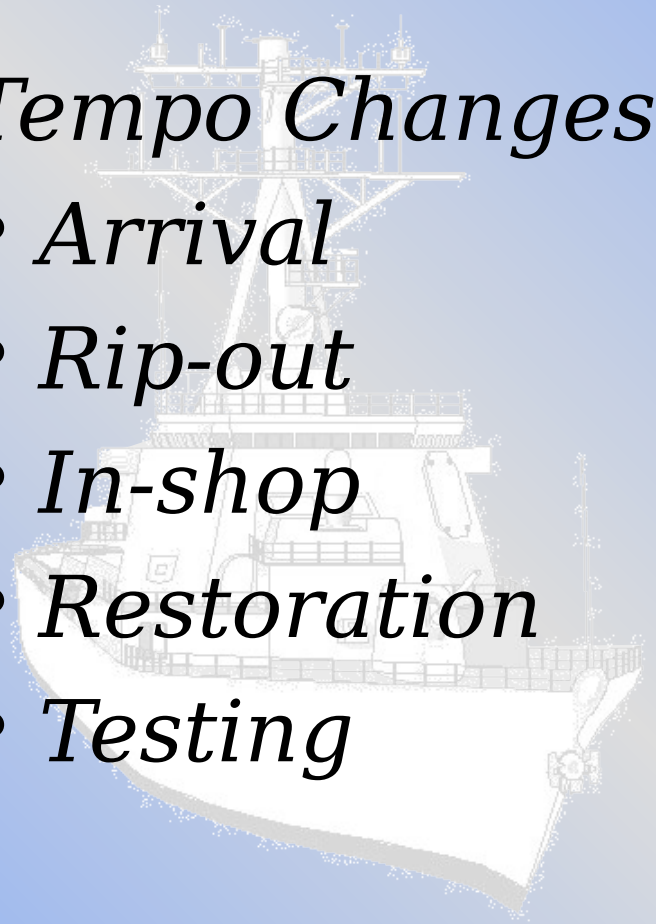
- Tempo changes
- Industrial Debris
- Obstructions



Availability Execution

Tempo Changes

- *Arrival*
- *Rip-out*
- *In-shop*
- *Restoration*
- *Testing*



Availability Execution

INDUSTRIAL DEBRIS

- Ship sets standard for cleanliness
- Maintain good housekeeping
- Blasting/grinding grit
- Special precautions required during “dirty” evolutions

More Later

Availability Execution

OBSTRUCTIONS

- *Vent hoses*
- *Welding leads*
- *LP air lines, etc*

Maintain Fire Boundaries

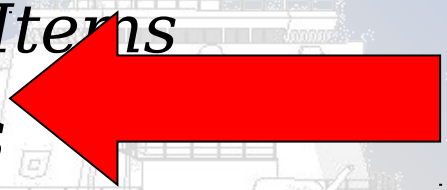
Dealing with the Shipyard

- *Maintain ownership*
- *Maintain professional relationship*
- *Understand "Work Items"*
- *Quote only foreman and above*
- *Stopping work*
- *Set work site standards*
- *Stay visible*

Availability Execution

Know the Work

- *Repair*
  - *Work specifications*
  - *Standard Items*
- *Alterations*
  - *Sensibility*
  - *Integrated Logistics Support*
  - *Functionality*



AMP & RMMCO

Availability Execution

NAVSEA STANDARD ITEMS

(Migrating to Master Spec Catalog)

CAT I

ALWAYS INVOKED

Safety & Workmanship Related

CAT II

SPECIFICALLY INVOKED

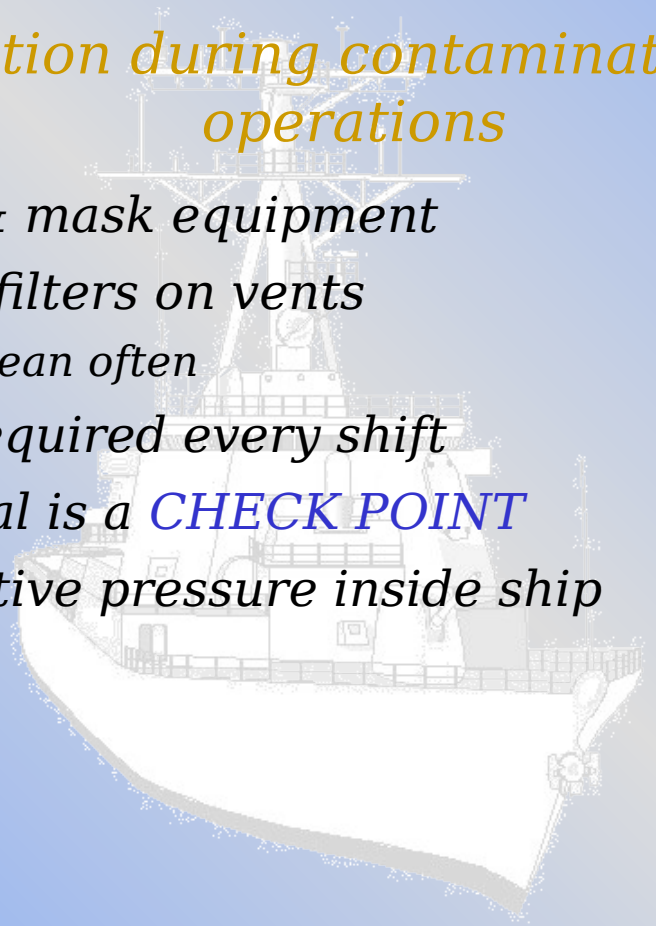
More Specialized

Ensuring Category I compliance is CO's leverage against poor shipyard practices

CATEGORY I STANDARD ITEMS

009-06 Protection during contamination producing operations

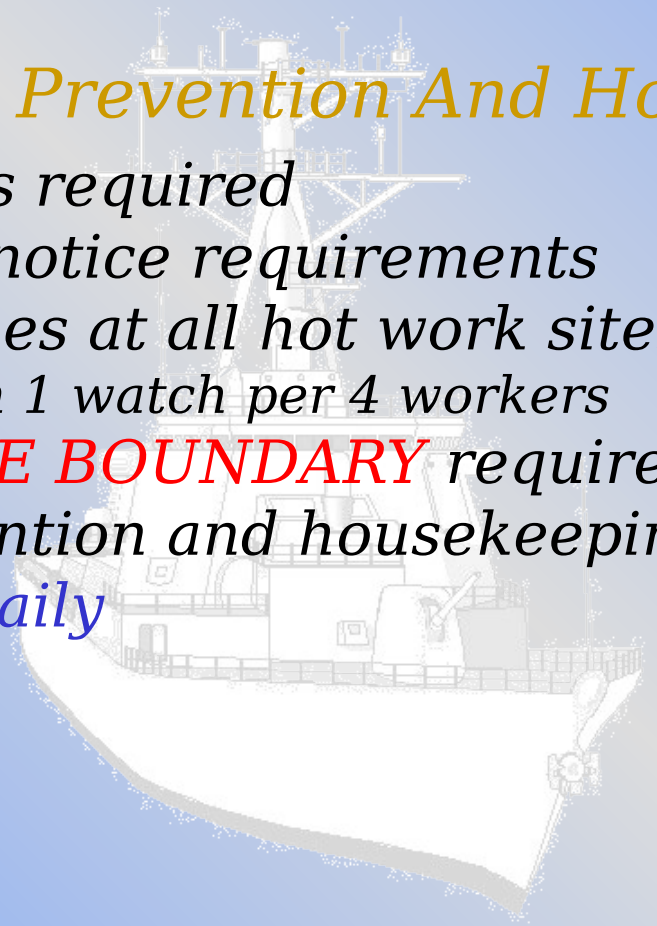
- Cover, wrap & mask equipment
- Install intake filters on vents
  - Replace or clean often
- Inspections required every shift
- Debris removal is a CHECK POINT
- Maintain positive pressure inside ship



CATEGORY I STANDARD ITEMS

009-07 Fire Prevention And Housekeeping

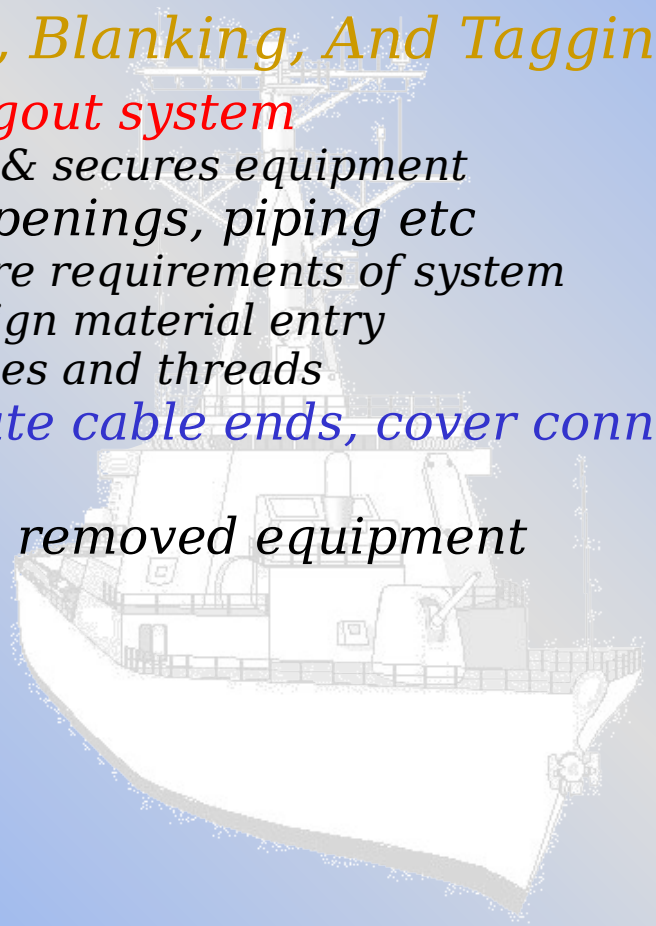
- Gas free as required
- Hot Work notice requirements
- Fire watches at all hot work sites
  - Minimum 1 watch per 4 workers
- FIRE ZONE BOUNDARY requirements
- Fire prevention and housekeeping inspections required daily



CATEGORY I STANDARD ITEMS

009-24 Isolation, Blanking, And Tagging Requirements

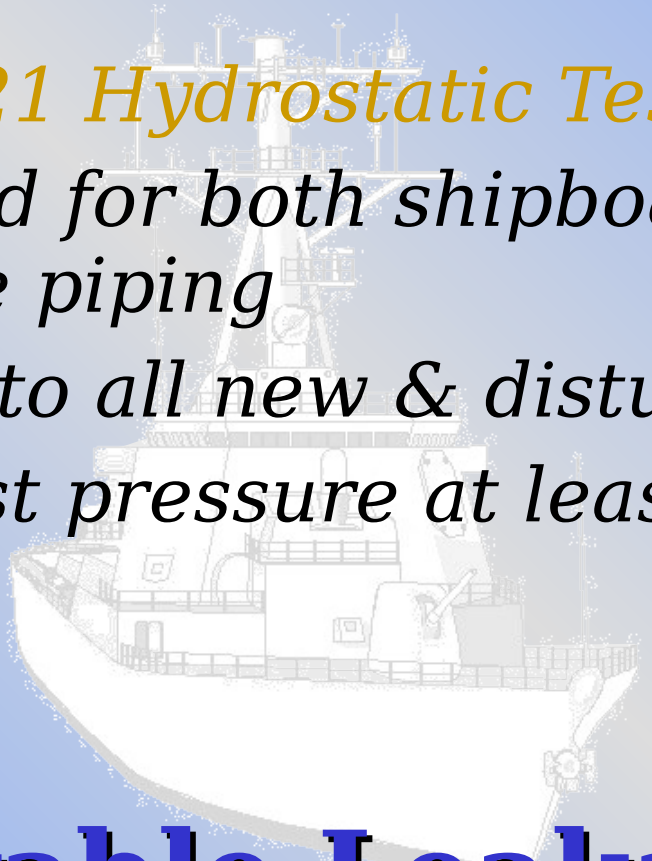
- Use Ship's tagout system
  - SF positions & secures equipment
- Hard Blank openings, piping etc
  - Meet pressure requirements of system
  - Prevent foreign material entry
  - Protect flanges and threads
- Tape & Insulate cable ends, cover connectors & identify circuits
- ID Tags on all removed equipment



CATEGORY II STANDARD ITEMS

009-21 Hydrostatic Testing

- Required for both shipboard and portable piping
- Applies to all new & disturbed piping
- Hold test pressure at least thirty minutes



Allowable Leakage = ZER

CATEGORY II STANDARD ITEMS

009-22 Cable Testing

- Required for <u>any</u> disconnected, pulled back, relocated or newly installed cable
- Invoked by SI 009-73
- Consists of:
  - Insulation (megger) tests
  - Continuity (ohmmeter) tests

Integrating Ship's Force Work

- *Shipyard work takes precedence*
- *Support Milestones and Key Events*
- *Ship-to-Shop FMA work*
- *Realistic planning*
- *Coordinating AIT work*

Shipyard Key Events

APRIL 4 2003

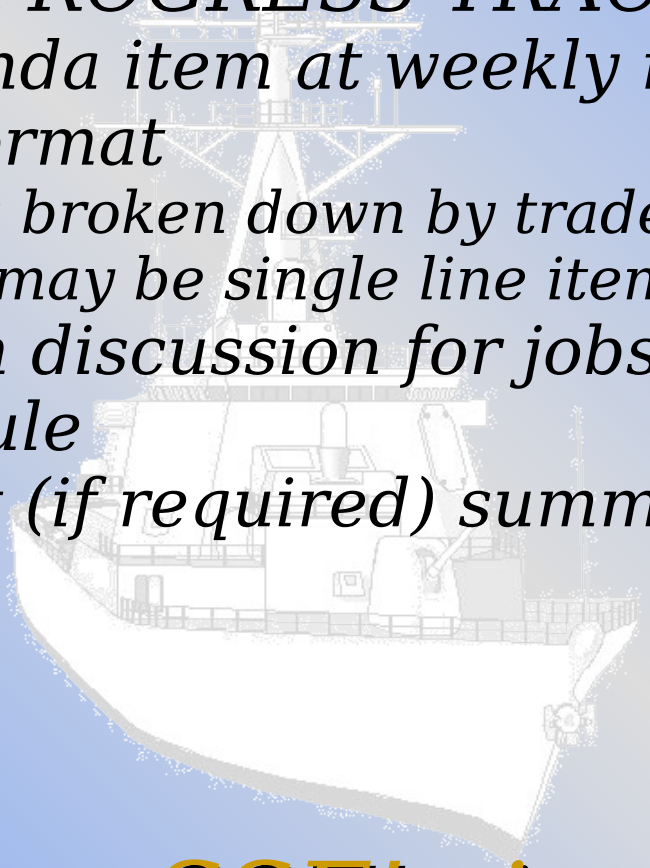
CNO AVAILABILITY (9 WEEKS)

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Post Avail. Events
Wednesday . Arrival Conference (Ship/SUPSHIP /SY)	. HMERA 1 (Ship/ SUPSHIP C220)	→		. DMS Testing (AEGIS ships)	→	. AEGIS Light-Off	→	→	.Sea Trials
* Crew Move - off (Ship)	→	→	→	→	* Crew Move Aboard (Ship)	. Combat System Testing	→	. Dock Trial	* LOA / ISIC Assess-ment
* Drydock (Ship/ SUPSHIP/SY)	→	→	→	→	*Undocking (Ship/ SUPSHIP/SY)	. PCD	. AVCERT	. Fast Cruise	* Well Deck Test
. Tanks & Voids Assessment (Ship/ SUPSHIP C220)	→	→		. 50% Conference (Ship/ SUPSHIP/ SY)	. LTT for ENG. Light-off		. Fuel Ship	Wednesday . Contractor/ CNO End Date	
							. ENG Light-Off		
. Start ILR (Ship/ ILR Team)	→	→	→	→	→	→	→		

Availability Execution

JOB PROGRESS TRACKING

- Standing agenda item at weekly meetings
- Gantt chart format
  - Complex jobs broken down by trades
  - Smaller jobs may be single line item
- Recovery plan discussion for jobs which are behind schedule
- Weekly report (if required) summarizes progress



CO relies on SSE's input for verifi

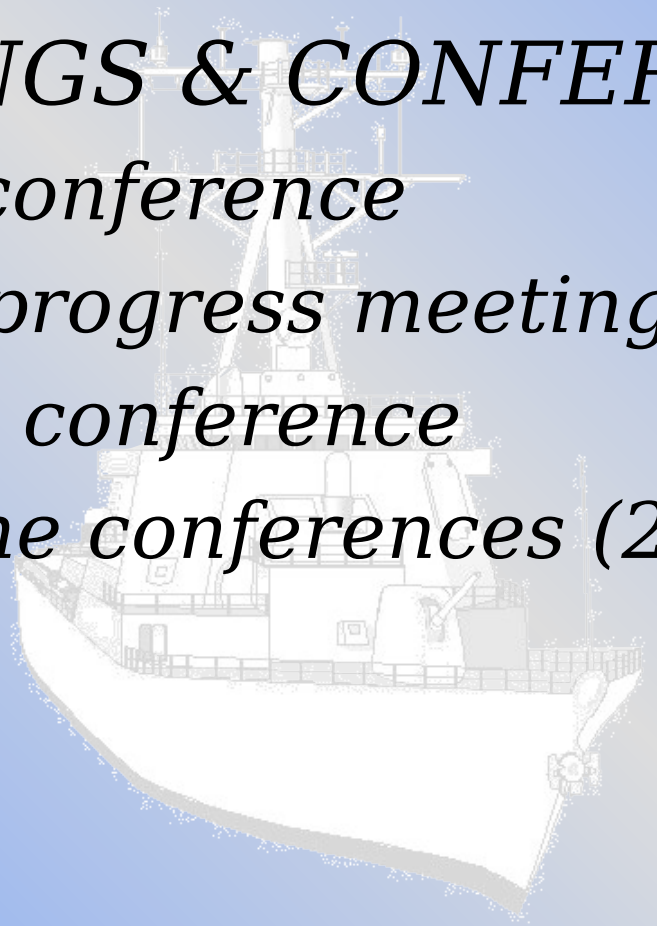
Gantt Chart

JOB NR	10	20	30	40	50	60	70	80	90	100	%
EM01/0889	1-08 1-08	→	→	→	→	1-30	→	→	→	2-18	

Availability Execution

MEETINGS & CONFERENCES

- Arrival conference
- Weekly progress meetings
- Docking conference
- Milestone conferences (25/50/75%)



Meetings & Conferences

ARRIVAL CONFERENCE

- Discuss work schedule & production planning
- Shipyard regulations affecting ship
- General administrative information
- Meet key shipyard and SUPSHIP personnel

STATE YOUR PRIORITIES

Weekly Meeting Cycle : Sup Ship Availability

MON	TUES	WED	THUR	FRI
Assess Progress of Shipyard, AIT, Ship, IMA Work: reschedule work as appropriate	Div Work Status Meetings: reschedule work as appropriate	Internal Ship CO, XO, Avail. Mgr., SUPSHIP PM DH, DIV, SSE, IMA Ship Supt.	Ship CO Meet with CO SUPSHIP	Release Ship's Availability Status Message
	DH Work Status Meetings: Reschedule work as appropriate	Ship Meet with Shipyard & SUPSHIP Project Team	Chop Ship's Availability Status Message	Distribute Weekly SWAAT Reports

Meetings & Conferences

WEEKLY MANAGEMENT MEETING

- *FORMAL means for addressing specific issues with shipyard management*
- *Status of Critical Path Jobs*
- *Review of Work Item Progress*
- *Attainability of Milestones & Key Events*

CO may submit agenda items

Weekly Management Meeting

Ship Agenda Items

- *Equipment or System Noun Name*
- *Job order number SWLIN and JSN*
- *Purpose of the job (replace, overhaul, install, etc.)*
- *Planned start and complete dates (include any already authorized changes)*
- *What is the problem?*
- *Why is this problem significant?*
- *What is the solution?*

Availability Execution

TRIALS MANAGEMENT

- Systems Testing
  - Combat Systems
  - Propulsion Plant
- Crew Certification
- Dock Trials
- Fast Cruise
- Sea Trials

Availability Execution

SYSTEM TESTING

- Shipyard tests all equipment worked
  - Existing Test Procedures used where possible
  - Contractor written tests if needed
  - SF personnel operate equipment
- Operational tests are **CHECK POINTS**
- SF does prerequisite tests on support equipment not worked by the contractor

SSE should attend all tests

Trials Management

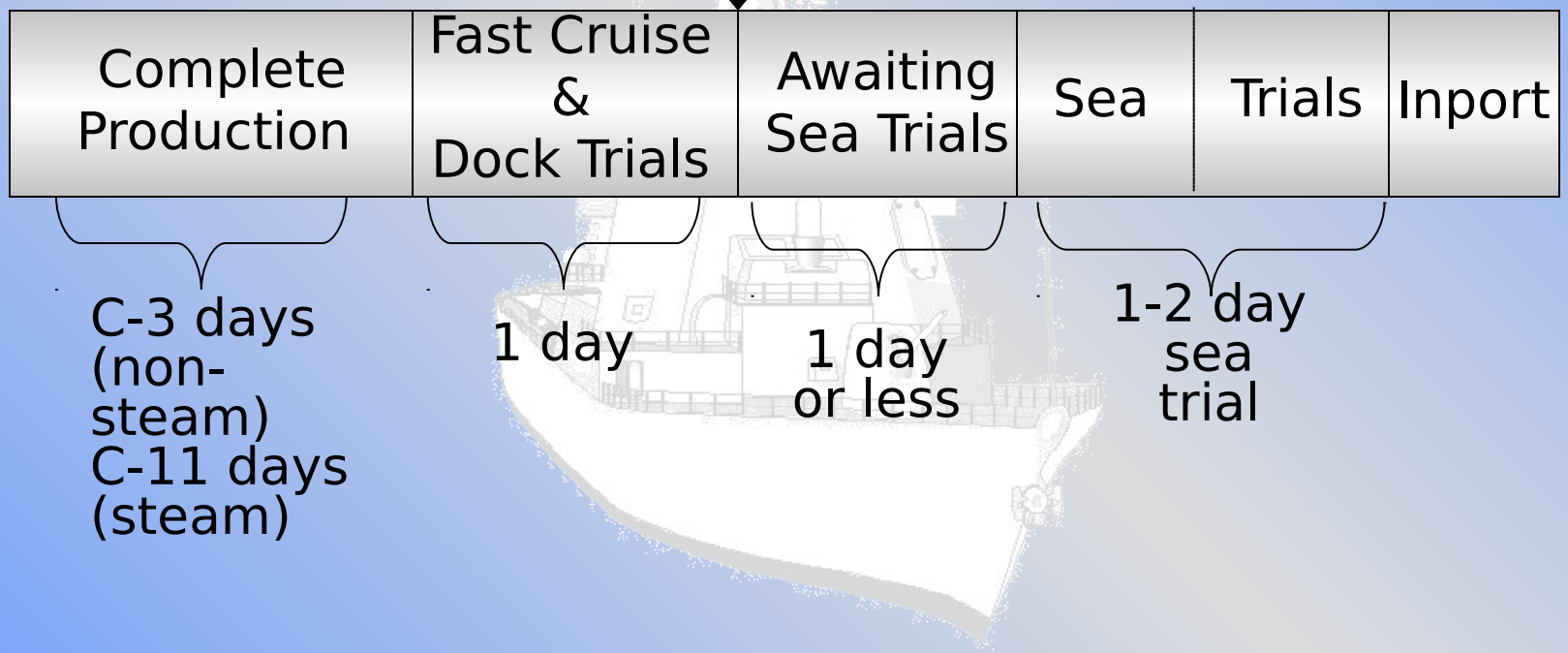
CREW CERTIFICATION

- Requirement based on length of the availability
- Ensure acceptable training levels for:
  - SOPs, Watch Station Qualifications, Emergency Bills, Casualty Control, and Equipment Operation

See Surface Force Training Manual for Details

Trials Time Line (Less than 120 days)

All S/Y testing complete by Avail completion date!



Trials Check Sheet

System	Equipment	Unit Number	Significant Maintenance During Avail.	S/F FMA Depot	Dock Trials Results Tested by	Fast Cruise Results Tested by	Sea Trials Results Tested by:
Drainage	EDU OVBD DISC VLV EDV 5-145-1		Replace internals	S/Y	---	---	SAT MMC Flange
Firemain	Fire pump	#2	Mechanical Seal Replaced	FMA	SAT DC1 SSE		
Firemain	ISO VLV	FMCO 2-135-0	Replace	S/F	UNSAT DC1 SSE	SAT DCC Top	

Trials Management

DOCK TRIALS

- Designed for engineering plant testing
- Shipyard tests all systems worked
- Man up all special details and required general quarters

JFMM Vol II, Appendix 3-I lists minimum requirements

FAST CRUISE

CO SHOULD JEALOUSLY GUARD THIS TIME FOR THE CREW

Effective use of Fast Cruise sets environment as if underway

See Surface Force Training Manual, Chap 2, para 2504 & JFMM Vol II, Appendix 3-I

Trials Management

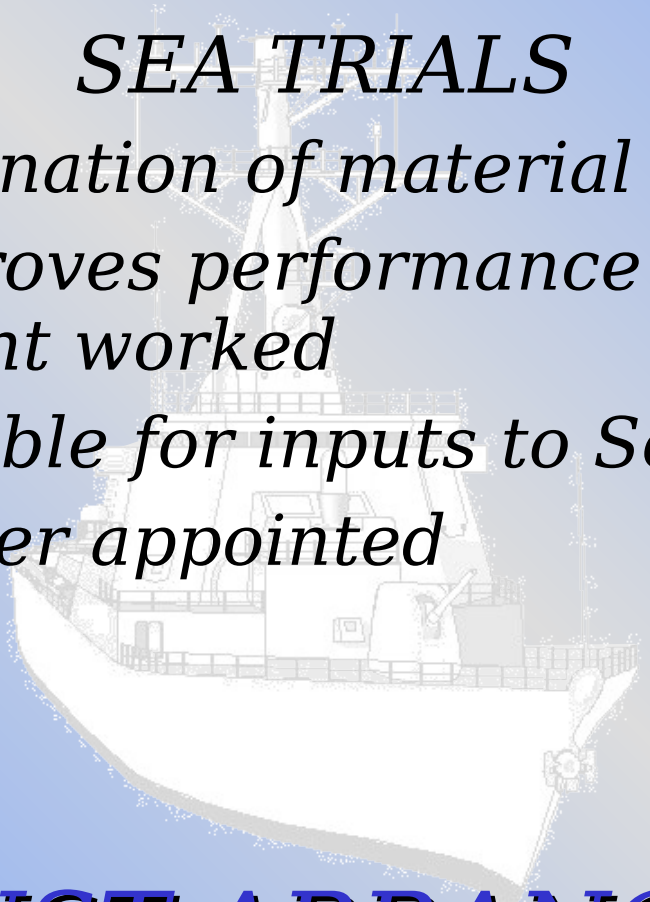
FAST CRUISE

- *COs use in ensuring readiness for Sea Trials*
- *No industrial work ongoing*
- *Man all special details, watch stations, etc*
- *Conduct emergency drills*
- *Set & check material conditions*
- *Check **ALL** interior communications*

Trials Management

SEA TRIALS

- *Final determination of material condition*
- *Contractor proves performance of all systems and equipment worked*
- *Ship responsible for inputs to Sea Trial Agenda*
- *SF Trial Officer appointed*



SHIP MUST ARRANGE SERVICE

SEA TRIALS

Shipyard provides input for agenda. SHIP WRITES SOE

SHIP RESPONSIBLE FOR:

- ***OPAREA REQUESTS***
- ***AMMO ONLOAD***
- ***AIRCRAFT SVCS***
- ***OTHER OPERATIONAL SERVICES***

See JFMM Vol II, Appendix 3-K

Completion Reports

- *Formal reports & messages*
- *CO Survey*
- *Lessons learned*

CO Survey

Identity: Select ID **Progress Review:** Select **Hull:**

Avail Type: **Email:**

Naval Supervisory Activity, SHAPEC/Planning Yard, or Ship Repair Facility/Unit

Select

Executing Naval Shipyard or Prime Contractor:

I am satisfied with my ship's availability in the area of:
(please select one for each area observed)

1 - Not at All 2 - To a Small Extent 3 - To a Moderate Extent
4 - To a Great Extent 5 - To a Very Great Extent 6 - Don't Know

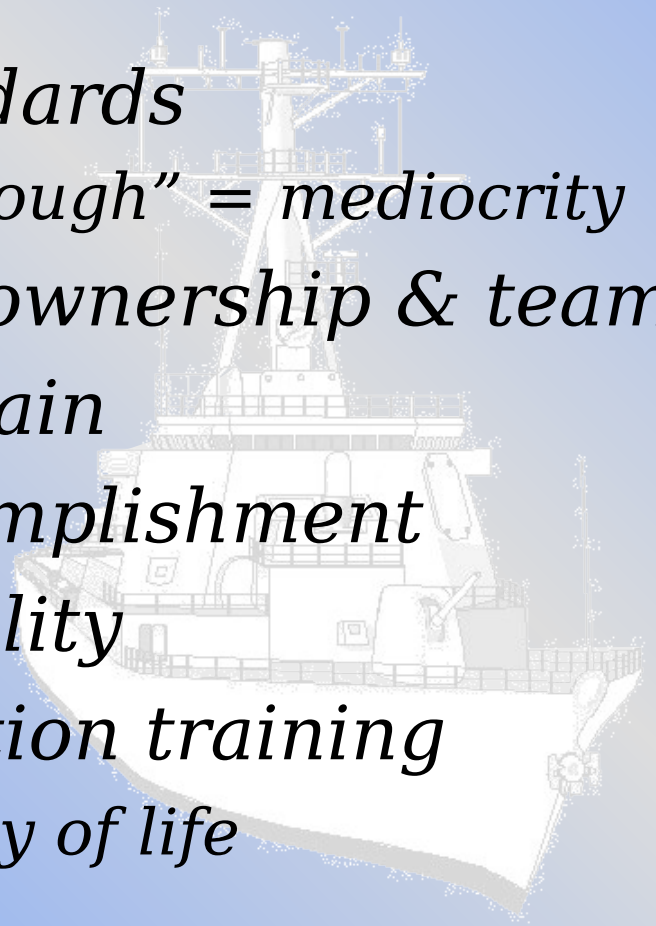
	Satisfaction						Importance					
	1	2	3	4	5	6	1	2	3	4	5	6
Quality of Work:												
Schedule Adherence:												
Responsiveness:												
Communication:												
Quality of Life:												
(Shipboard)												
(Shore)												
Cleanliness:												
Coordination:												
Productivity:												
Safety:												
Cost Management:												
Planning:												

Comments?

Submit Form Reset Form

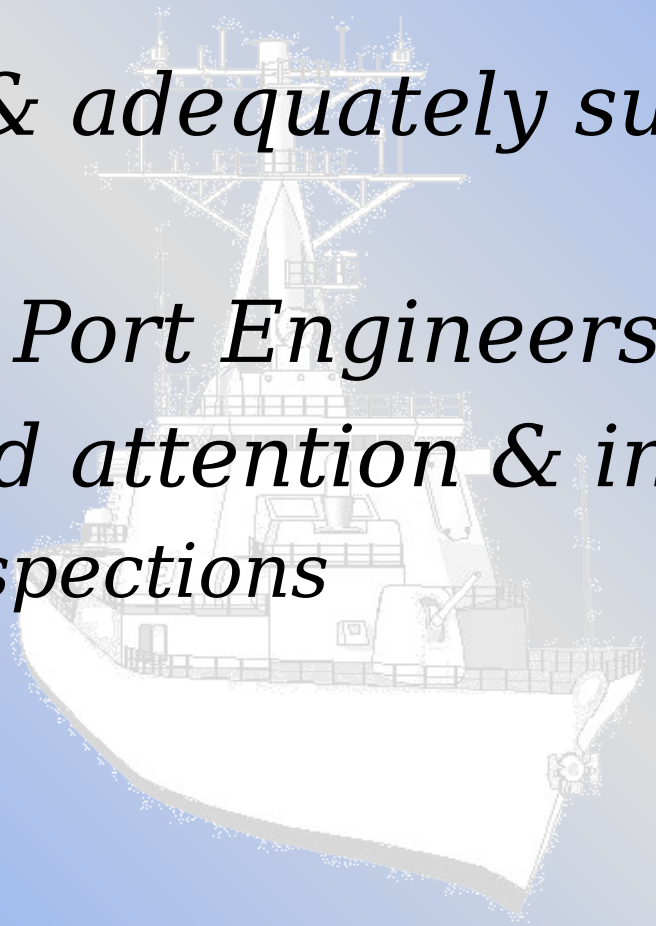
Keys to Material Readiness

- *High standards*
  - *"Good enough" = mediocrity*
- *Shipwide ownership & teamwork*
- *Steady strain*
- *PMS accomplishment*
- *CSMP quality*
- *Watch station training*
  - *OSS a way of life*



Keys to Material Readiness

- *Trained & adequately supervised DCPOs*
- *Engaged Port Engineers*
- *Command attention & involvement*
  - *Zone inspections*



Command Level

Conclusion